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NBS SPECIAL PUBLICATION 366

SUPPLEMENT 2

U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

Bibliography on Atomic Line Shapes and Shifts

(July 1973 through May 1975)

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1975
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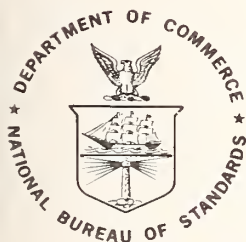
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Bibliography on Atomic Line Shapes and Shifts

(July 1973 through May 1975)

J. R. Fuhr, G. A. Martin, and B. J. Specht

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Foreword

The National Standard Reference Data System was established in 1963 for the purpose of promoting the critical evaluation and dissemination of numerical data of the physical sciences. The program is coordinated by the Office of Standard Reference Data of the National Bureau of Standards but involves the efforts of many groups in universities, government laboratories, and private industry. The primary aim of the program is to provide compilations of critically evaluated physical and chemical property data. These tables are published in the *Journal of Physical and Chemical Reference Data*, in the NSRDS-NBS series of the National Bureau of Standards, and through other appropriate channels.

The task of critical evaluation is carried out in various data centers, each with a well-defined technical scope. A necessary preliminary step to the critical evaluation process is the retrieval from the world scientific literature of all papers falling within the scope of the center. Each center, therefore, builds up a comprehensive well-indexed bibliographical file which forms the base for the evaluation task. Bibliographies derived from these files are published when they appear to be of value to research workers and others interested in the particular technical area.

Further information on NSRDS and the publications which form the primary output of the program may be obtained by writing to the Office of Standard Reference Data, National Bureau of Standards, Washington, DC 20234.

David R. Lide, Jr., Chief
Office of Standard Reference Data

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BIBLIOGRAPHY ON ATOMIC LINE SHAPES AND SHIFTS

(July 1973 through May 1975)

J. R. Fuhr, G. A. Martin, and B. J. Specht

This is the second supplement to the NBS Special Publication 366, "Bibliography on Atomic Line Shapes and Shifts (1889 through March 1972)." It contains about 400 references and covers the literature from July 1973 through May 1975. As before, the bibliography contains five major parts: (1) All general interest papers are catalogued according to the broadening mechanisms (and, further, according to special topics under several of the mechanisms) and as to whether the work is a general theory, a general review, a table of profiles or parameters, a comment on existing work, a study of general experimental measurement techniques, or an experimental effort of general importance. Also included are selected papers on important applications of line broadening and on miscellaneous topics relating to atomic spectral line shapes and shifts. (2) In Part 2, all papers containing numerical data are ordered as to element, ionization stage, and broadening mechanism (in the case of foreign gas broadening the perturbing species are listed), and it is indicated whether the data are experimentally or theoretically derived. (3) While in the two preceding parts of the bibliography the references are listed for brevity by identification numbers only, in Part 3 all references are listed completely by journal, authors, and title and are generally arranged chronologically and alphabetically within each year according to the principal author. (4) This section contains a list of all authors and their papers. (5) A final section provides corrections or additions to the first bibliography and supplement.

Key words: Atomic; instrumental broadening; line shapes; line shifts; pressure broadening; resonance broadening; Stark broadening; Van der Waals broadening.

A. INTRODUCTION

Since the publication of our latest "Bibliography on Atomic Line Shapes and Shifts (April 1972 through June 1973),"¹ which is the first supplement to our original bibliography,² the number of articles containing either numerical data, reviews, or comments of general interest has again increased sufficiently as to warrant a new supplement. This second supplement, containing about 400 references, includes all new papers (and a few older papers that were missed before) that were received in the NBS library before May 31, 1975. In addition, we have incorporated English translations of previously cited Russian articles into this bibliography.

The arrangement of the preceding bibliographies is generally retained. Thus, recently discovered articles published prior to 1973 are listed in Section 3 under the year of publication with a number immediately following the last number cited for that year in either the original bibliography or the first supplement. These

new numbers do not overlap with those of the following year as several "open" numbers were left at the end of each year for such additions. Unfortunately, we ran out of "open" numbers between the years 1970 and 1971. Hence, for these years the references are not listed in strict numerical order.

Since we feel that our collection of articles for the year 1973 is now reasonably complete, all references for that year have been renumbered for this supplement and are listed here with the new numbers. As in the first supplement, we have provided an errata section. This section consists of corrections and additions to Supplement 1, as well as to the original bibliography, not already noted in Supplement 1. Finally, in this last section, we provide references to English translations of previously cited Russian articles.

We gratefully acknowledge the many helpful comments and suggestions of Dr. W. L. Wiese. We would also like to express our sincere thanks to Dr. L. J. Roszman, who helped in the selection and classification of the articles.

¹ Fuhr, J. R., Roszman, L. J., and Wiese, W. L., Bibliography on Atomic Line Shapes and Shifts (April 1972 through June 1973), Nat. Bur. Stand. (U.S.), Spec. Publ. 366, Suppl. 1, 73 pages (Jan. 1974).

² Fuhr, J. R., Wiese, W. L., and Roszman, L. J., Bibliography on Atomic Line Shapes and Shifts (1889 through March 1972), Nat. Bur. Stand. (U.S.), Spec. Publ. 366, 165 pages (Sept. 1972).

TABLE OF CODE LETTERS AND ABBREVIATIONS

A. Description

1. T—theoretical method
2. E—experimental method
3. C—comment

B. Language

1. Dut.—Dutch
2. Fr.—French
3. Ger.—German
4. Ital.—Italian
5. Lith.—Lithuanian
6. Pol.—Polish
7. Russ.—Russian

B. BIBLIOGRAPHICAL MATERIAL

1. LITERATURE REFERENCES OF GENERAL INTEREST

1.0. GENERAL ARTICLES ON LINE SHAPES AND SHIFTS (GENERAL THEORIES AND COMMENTS, ETC.)

Theoretical papers: 2288, 2327

1.1. PRESSURE BROADENING

Theoretical papers: 1368, 2092, 2093, 2160, 2253, 2263, 2276,
2285, 2332, 2336, 2342, 2343, 2346, 2359,
2413, 2434, 2487, 2508, 2513

1.1.1. Stark broadening and shifts

Theoretical papers: 1372, 2143, 2232, 2270, 2274, 2283,
2285, 2328, 2329, 2382, 2420, 2436,
2440, 2460, 2508

1.1.1.1. Hydrogen and hydrogen-like (overlapping) lines

Comments: 2196

Theoretical papers: 1368, 1371, 1879, 2153,
2187, 2216, 2281, 2282,
2286, 2300, 2420, 2423,
2453

1.1.1.2. Isolated lines of neutral spectra

Comments: 2104

Theoretical papers: 2174, 2349

1.1.1.3. Isolated lines of ionic spectra

Comments: 2104

1.1.1.4. Topics of particular interest

A. Line wings

Theoretical papers: 2281

B. Effects of collective electric fields

Experimental papers: 2188, 2189, 2191,
2256, 2269, 2368,
2424, 2492

Theoretical papers: 1892, 2449, 2510

C. Asymmetries of H-lines

Theoretical papers: 2146, 2281

D. Microfield distributions

Experimental papers: 2269

Theoretical papers: 2187, 2220, 2275,
2431, 2440, 2443,
2517

E. Magnetic fields

Theoretical papers: 2391

F. Turbulent plasmas

Theoretical papers: 1892

1.1.2. Broadening in foreign gases (van der Waals broadening)

Theoretical papers: 2106, 2137, 2157, 2165, 2184, 2199,
2236, 2249, 2337, 2372, 2402, 2434,
2511

1.1.2.1. Satellite bands

Comments: 2171

Experimental papers: 2338, 2375, 2392

Theoretical papers: 2141, 2144, 2168, 2195,
2279, 2437

Combined theoretical-experimental: 2404

1.1.3. Resonance broadening

Comments: 2099

Theoretical papers: 738, 1020, 2169, 2185, 2200, 2234,
2255, 2385, 2520, 2522

1.2. BASIC ARTICLES ON DOPPLER AND NATURAL LINE SHAPES

1.2.1. Doppler broadening

Experimental papers: 2287

Theoretical papers: 2175, 2181, 2199, 2364, 2418, 2486,
2497

1.2.2. Natural line broadening

No papers in this category.

1.2.3. Radiation induced broadening

Experimental papers: 1995, 2178

Theoretical papers: 738, 2011, 2147, 2159, 2194, 2199,
2388, 2394, 2462

Combined theoretical-experimental: 2290

1.3. BASIC PAPERS ON INSTRUMENTAL BROADENING, DECONVOLUTION,
SUPERPOSITION OF TWO OR MORE SIMULTANEOUSLY ACTING BROADENING
MECHANISMS

1.3.1. Determination of instrumental line profiles; experimental
techniques for determining line shapes

Experimental papers: 1690, 1691, 2287, 2297, 2356, 2357,
2444

Theoretical papers: 1839, 1840, 1868, 1887, 1894, 1897,
1940, 1996, 1999, 2024, 2192, 2215,
2226, 2235, 2250, 2262, 2295, 2414,
2429

1.3.2. Deconvolution

Experimental papers: 2230

Theoretical papers: 293, 802, 1243, 1244, 1374, 1868,
1889, 1996, 2024, 2167, 2227, 2235,
2242, 2264, 2289, 2303, 2378, 2383,
2390, 2410, 2430, 2447, 2455, 2459

1.3.3. Superposition of broadening mechanisms

Theoretical papers: 1899, 2096, 2105, 2175, 2192, 2199,
2201, 2209, 2215, 2262, 2339, 2364,
2381, 2396, 2430, 2448, 2455, 2456,
2457, 2497, 2512, 2514

1.4. IMPORTANT LINE BROADENING APPLICATIONS

1.4.1. Laser applications

Experimental papers: 1126, 1789, 1995, 2155, 2178, 2213,
2225, 2252, 2277, 2299, 2334

Theoretical papers: 2181, 2223, 2263, 2336, 2344, 2345,
2405, 2493

Combined theoretical-experimental: 2369

1.4.2. Astrophysical applications

Theoretical papers: 2182, 2201, 2210, 2254, 2266, 2298,
2348, 2371, 2384, 2430, 2504, 2506,
2511

Combined theoretical-experimental: 2284

1.4.3. Plasma diagnostics

Comments: 2251, 2296

Experimental papers: 1878, 1890, 1893, 1900, 2110, 2193,
2219, 2221, 2265, 2273, 2304, 2408,
2417, 2428, 2503

Theoretical papers: 1888, 1892, 2175, 2181, 2197, 2248,
2351, 2371, 2451, 2499

Combined theoretical-experimental: 1019, 1689, 2094,
2152, 2330, 2438

1.4.4.. Other applications

Experimental papers: 942, 2190

Theoretical papers: 1895, 2261, 2292, 2346

Combined theoretical-experimental: 2290, 2291, 2330,
2353

1.5. OTHER TOPICS INVOLVING LINE SHAPES AND SHIFTS

1.5.1. The line shape in the presence of self-absorption; effects of radiative transfer

Comments: 2074

Experimental papers: 2297

Theoretical papers: 2112, 2177, 2210, 2301, 2398, 2419,
2486

1.5.2. Broadening of scattered radiation

Comments: 2074

Experimental papers: 2136, 2393

Theoretical papers: 2106, 2302, 2486

1.5.3. Some important papers on molecular line broadening

Reviews: 2222, 2427

Theoretical papers: 2137, 2149, 2183, 2184, 2255, 2293,
2363

1.5.4. Miscellaneous topics

A. Broadening of x-ray lines

Theoretical papers: 2333, 2399, 2405

B. Light shifts

Experimental papers: 2502

Theoretical papers: 1375, 2355, 2377, 2401, 2490

Combined theoretical-experimental: 2156

C. Zeeman broadening

Theoretical papers: 2098, 2253

D. Spin-exchange broadening

Theoretical papers: 2200

1.6. REVIEW ARTICLES

1.6.1. General line broadening reviews

2111

1.6.2. Reviews on pressure broadening

2108, 2109, 2439, 2487

1.6.2.1. Reviews on Stark broadening

2371

1.6.2.2. Reviews on foreign gas broadening

2516

1.6.2.3. Reviews on resonance broadening

1373, 2185

1.7. REFERENCES ON LINE BROADENING TABLES AND BIBLIOGRAPHIES

1.7.1. General line broadening tables

No papers in this category.

1.7.2. Pressure broadening tables

No papers in this category.

1.7.2.1. Special Stark broadening tables

2212, 2294, 2371, 2484

1.7.3. Doppler and natural line broadening tables

No papers in this category.

1.7.4. Tables of Voigt functions

No papers in this category.

1.7.5. Line broadening bibliographies

2361

2. LITERATURE REFERENCES CONTAINING NUMERICAL DATA

(References on individual elements and stages of ionization,
classified according to broadening mechanism)

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
Ag (Silver)		<u>Ar II</u>	
		Stark, E	2148,2221,2230, 2395
<u>Ag I</u>		Stark, T	2211
Van der Waals, E	2455 by Air-C ₂ H ₂ 1898 by H ₂ -O ₂ -Ar	<u>Ar III</u>	2509
Al (Aluminum)		<u>Ar IV</u>	2509
		Stark, E	
		Ba (Barium)	
<u>Al I</u>		<u>Ba I</u>	
Stark, E	2458		
Van der Waals, E	2454 by C ₂ H ₂ -N ₂ O	Van der Waals, E	1369,2162 by Ar 1369,2162 by He
Doppler-Van der Waals, T,E	2297 by C ₂ H ₂ -N ₂ O		1369 by Kr 1369 by Ne
<u>Al II</u>		Van der Waals, T	2441 by Ar 2441 by He 2441 by Kr 2441 by Ne 2441 by Xe
Stark, E	2202		
Stark, T,E	2483		
Ar (Argon)		<u>Ba II</u>	
<u>Ar I</u>			
Resonance, E	2193,2341	Stark, E	2198
Stark, E	2023,2148,2428	Van der Waals, E	2134,2135,2163, 2380, 2446 by Ar
Stark, T	1775		2134,2135,2163, 2380,2446 by He
Stark, T,E	1372		2446 by Kr 2446 by Ne 2446 by Xe
Van der Waals, E	2341,2501 by Ar		
Van der Waals, T	1775 by Ar		
Van der Waals, T,E	2096 by Ar		
Stark-Doppler- Instrumental, E	1893		

*The numbers refer to paper identification numbers of Part 3.

<u>Description</u>	<u>Reference No.*</u>
Van der Waals, T	2272 by Ar
	2384 by H
	2272 by He

Be (Beryllium)

	<u>Be II</u>	
Stark, E		2198
Stark, T		2211
Stark, T,E		2278
	<u>Be IV</u>	
Stark, E		2503

C (Carbon)

	<u>C I</u>	
Stark, E		2247
Stark, T		2348
Stark, T,E		2100
Van der Waals, T		2348 by H-He
	<u>C II</u>	
Stark, E		2233
Stark, T		2211
Stark-Natural, T		2038
	<u>C III</u>	
Stark, E		2233
	<u>C IV</u>	
Stark-Natural, T		2038
	<u>C V</u>	
Stark, T		2423
Stark, T,E		2208
	<u>C VI</u>	
Stark, T		2423
Stark, T,E		2208

Ca (Calcium)

	<u>Ca I</u>	
Resonance, E		2406
Stark, E		2206

<u>Description</u>	<u>Reference No.*</u>
Van der Waals, E	2217,2218,2455
	by Air-C ₂ H ₂
	1369,2162,2206
	by Ar
	2406 by Ca
	2454 by C ₂ H ₂ -N ₂ O
	1369,2162 by He
	2140 by H ₂ -Ar
	2140 by H ₂ -N ₂
	1369 by Kr
	1369 by Ne
	2217,2218 by
	N ₂ O-C ₂ H ₂
Van der Waals, T	2441 by Ar
	2441 by He
	2441 by Kr
	2441 by Ne
	2441 by Xe
Doppler-Van der Waals,	
T,E	2297 by C ₂ H ₂ -N ₂ O

	<u>Ca II</u>	
Stark, E		2101,2198,2206
Stark, T		2211,2449
Van der Waals, E		2163,2206 by Ar
		2163,2494 by He
Van der Waals, T		2372 by Ar
		2372 by He
		2372 by Kr
		2372 by Ne
		2372 by Xe
Doppler-Van der Waals,		
T,E		2297 by C ₂ H ₂ -N ₂ O

Cd (Cadmium)

	<u>Cd I</u>	
Resonance, E		2495
Van der Waals, E		2154 by Ne

*The numbers refer to paper identification numbers of Part 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
Cl (Chlorine)		Cu (Copper)	
<u>Cl II</u>		<u>Cu I</u>	
Stark, T	2211	Doppler, E	1896
Cr (Chromium)		Instrumental, E	1896
<u>Cr I</u>		Line, E	1896
Doppler-Van der Waals, T,E	2297 by C ₂ H ₂ -N ₂ O	Resonance, T	1019
Cs (Cesium)		Stark, E	1896
<u>Cs I</u>		Stark, T	2331
Resonance, T,E	2411,2412	Stark, T,E	1019
Stark, E	2110	Van der Waals, E	2455 by Air-C ₂ H ₂ 2422 by Ar 2422 by N ₂
Van der Waals, E	2161,2176,2352, 2409,2446 by Ar 2409,2446 by He 2446 by Kr 2409,2446 by Ne 2446 by Xe	Van der Waals, T	1019 by H 1019 by O
Van der Waals, T	2144,2195,2272, 2332,2343,2437 by Ar 2195,2272,2332, 2433 by He 2195 by Hg 2195 by Kr 2195 by Ne 2144,2195,2325, 2326 by Xe 2411 by Cs	D (Deuterium)	
Van der Waals, T,E	2416 by Ar	<u>D I</u>	
Resonance-Van der Waals, E	2200	Stark, E	2382
Resonance-Zeeman, E		Stark, E,C	2214
		Van der Waals, E	2245 by Ar
		Eu (Europium)	
		<u>Eu I</u>	
		Resonance, E	2260
		Van der Waals, T,E	2421 by Ar 2421 by He 2421 by Kr 2421 by Ne 2421 by Xe
		F (Fluorine)	
		<u>F II</u>	
		Stark, E	2233

*The numbers refer to paper identification numbers of Part 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
Fe (Iron)		Stark, E	2094,2142,2186, 2228,2229,2233, 2304,2357,2358, 2382,2408,2426, 2428,2492
<u>Fe I</u>		Stark, T	2187,2216,2231, 2282,2283,2286, 2340,2347,2351, 2420,2460,2510, 2515,2521
Van der Waals, E	2365 by Ar 2170 by He		
Van der Waals, T	2491 by H		
<u>Fe XXIV</u>			
Stark, T	2453		
<u>Fe XXV</u>			
Stark, T	2453	Stark, E,C Stark, T,E Van der Waals, E Van der Waals, T	2214 2203 2245 by Ar 2157 by Ar 2157 by He 2157 by Kr 2157 by Ne 2496 by Ar 2496 by He 2496 by Ne 2428
Ga (Gallium)		Stark-Doppler, E Stark-Doppler- Instrumental, E Stark-Zeeman, E Stark-Zeeman, T	2428 1893 2094 2248
<u>Ga I</u>			
Van der Waals, E	2257 by Ar 2454 by $C_2H_2-N_2O$ 2257 by He 2257 by Kr 2257 by Ne 2257 by Xe	Van der Waals, T,E	
Van der Waals, T,E	2258 by Ar 2258 by He 2258 by Kr 2258 by Ne 2258 by Xe		
Doppler-Van der Waals, T,E	2297 by $C_2H_2-N_2O$		
Ge (Germanium)		He (Helium)	
<u>Ge I</u>		<u>He I</u>	
Stark, E	2389	Resonance, E Stark, E	2158,2400 1878,2240,2335, 2350,2354,2379, 2382,2403,2424, 2485,2492
<u>Ge II</u>		Stark, T	2177,2232,2328, 2349,2397,2407, 2440,2484,2504, 2519
Stark, T,E	2389		
H (Hydrogen)		Stark, T,E Van der Waals, T	2238,2246,2370 2179 by He
<u>H I</u>			
Resonance, T	2279		
Stark, C	2296		

*The numbers refer to paper identification numbers of Part 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
<u>He II</u>		In (Indium)	
Doppler, T,E	2280	<u>In I</u>	
Stark, E	1878,2188,2189, 2367,2368,2492	Van der Waals, E	2257,2489 by Ar 2454 by $C_2H_2-N_2O$ 2257,2489 by He 2257 by Kr 2257 by Ne 2257 by Xe
Stark, T	2415		2195 by Ar 2195 by Ne
Hg (Mercury)			2258 by Ar 2258 by He 2258 by Kr 2258 by Ne 2258 by Xe
<u>Hg I</u>		Van der Waals, T	2195 by Ar 2195 by Ne
Doppler, E	1691	Van der Waals, T,E	2258 by Ar 2258 by He 2258 by Kr 2258 by Ne 2258 by Xe
Resonance, E	2445		
Stark, E	2095	Doppler-Van der Waals, T,E	2297 by $C_2H_2-N_2O$
Van der Waals, E	2166,2236,2337, 2392,2445 by Ar 2151,2445 by He 2236,2244 by Hg 2445 by H_2 2337,2374,2375, 2392 by Kr 2151,2337 by Ne 2337,2392 by Xe 1838 by hydrocarbons	K (Potassium)	
Van der Waals, T	2195 by Ar 2195 by He 2195,2373 by Kr 2195 by Ne	<u>K I</u>	
I (Iodine)		Resonance, E	2505
<u>I I</u>		Stark, E	2164
Van der Waals, E	2461,2507 by Ar 2113 by $Ar-C_3F_7I$ 2507 by CO_2 2461,2507 by He 2461,2507 by Kr 2461,2507 by Ne 2507 by N_2 2461,2507 by Xe	Stark, T	1895
		Stark, T,E	2291
		Van der Waals, E	2138,2139,2360 by Ar 2138,2139 by He 2138,2139 by H_2 2136,2393 by K 2138,2139 by Kr 2138,2139 by Ne 2138,2139 by N_2 2138,2139 by Xe

*The numbers refer to paper identification numbers of Part 3.

<u>Description</u>	<u>Reference No.*</u>
Van der Waals, T	2195 by Ar 2195,2498 by He 2195 by Kr 2195 by Ne 2195 by Xe 2404 by Kr
Van der Waals, T,E	
Doppler-Van der Waals, T,E	2297 by $C_2H_2-N_2O$

Kr (Krypton)

<u>Kr I</u>	
Resonance, E	2207
Van der Waals, E	2366 by Ar 2366 by He
Van der Waals, T	2195,2511 by Ar 2195,2511 by He 2195 by Kr 2195 by Ne 2195 by Xe

Li (Lithium)

<u>Li I</u>	
Stark, E	2145,2243,2304, 2408
Stark, T	1895,2274,2292
Stark, T,E	2291,2330
Van der Waals, E	2163 by Ar 2163 by He
Van der Waals, T	2271 by He

Mg (Magnesium)

<u>Mg I</u>	
Stark, E	2102
Van der Waals, E	2102 by Ar 1898 by H_2-O_2-Ar
<u>Mg II</u>	
Stark, E	2102,2198
Stark, T	2211

<u>Description</u>	<u>Reference No.*</u>
Van der Waals, E	2102 by Ar
Van der Waals, T	2372 by Ar 2372 by He 2372 by Kr 2372 by Ne 2372 by Xe

Mn (Manganese)

<u>Mn I</u>	
Van der Waals, E	2267 by Ar 2454 by $C_2H_2-N_2O$ 2267 by He 2267 by H_2 2267 by N_2
Doppler-Van der Waals, T,E	2297 by $C_2H_2-N_2O$

Mo (Molybdenum)

<u>Mo I</u>	
Doppler-Van der Waals, T,E	2297 by $C_2H_2-N_2O$

N (Nitrogen)

<u>N I</u>	
Stark, E	2442
Stark, T,E	2150
<u>N II</u>	
Stark, T	2211
Stark-Natural, T	2038

Na (Sodium)

<u>Na I</u>	
Resonance, E	2505
Resonance, T	1888
Resonance, T,E	2112
Stark, E	2219

*The numbers refer to paper identification numbers of Part 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
Van der Waals, E	2163,2180 by Ar 2163,2180 by He 2180 by Kr 2180,2488 by Ne 2180 by Xe	Rb (Rubidium) <u>Rb I</u> Resonance, E Resonance, T,E Van der Waals, E	2190,2224,2505 2362 1891,2103,2176, 2237,2338,2450 by Ar 2450 by He 2338 by Kr 1891,2338,2450 by Ne 1891,2450 by N ₂ 2224 by Rb 1891,2338 by Xe
Van der Waals, T	2195,2511 by Ar 2298,2432,2511, 2516,2518 by H 2097,2195,2348, 2498,2511 by He 2195 by Kr 2195 by Ne 2195 by Xe		2195,2372,2511 by Ar 2195,2372,2433, 2511 by He 2195,2372 by Kr 2195,2372,2500 by Ne 2195,2372 by Xe
Van der Waals, T,E	2173 by He	Van der Waals, T	2200
Ne (Neon)		S (Sulfur)	
	<u>Ne I</u>		<u>S II</u>
Pressure, E	1789	Stark, T	2211
Resonance, E	2213,2239		Si (Silicon) <u>Si I</u> Stark, E Stark, T Van der Waals, T
Stark, E	2386,2387		2268,2425 2348 2348 by H-He
Stark, T	1775		<u>Si II</u> Stark, E Stark, T Stark-Natural, T
Van der Waals, E	2252 by He 2225,2435 by He-Ne 2252,2386 by Ne		2268,2425 2211 2038
Van der Waals, T	1775 by Ne		
O (Oxygen)			
	<u>O I</u>		
Stark, T	2348		
Stark, T,E	1370		
Van der Waals, E	2205 by Ar 2205 by Kr 2205 by Xe		
Van der Waals, T	2348 by H-He		
Pb (Lead)			
	<u>Pb I</u>		
Resonance, T,E	2376		

*The numbers refer to paper identification numbers of Part 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
<u>Si III</u>		Van der Waals, E	2257 by Ar
Stark, E	2268,2425		2257 by He
Stark-Natural, T	.2038		2257 by Kr
<u>Si IV</u>			2257 by Ne
Stark-Natural, T	2038		2257 by Xe
Sr (Strontium)		Van der Waals, T	2195 by Ar
<u>Sr I</u>			2195 by He
Van der Waals, E	1369,2162 by Ar		2195 by Kr
	2204 by CO-N ₂ O	Van der Waals, T,E	2195 by Ne
	2204 by CO-O ₂ -Ar		2195 by Xe
	1369,2162 by He		2258 by Ar
	1369 by Kr		2258 by He
	1369 by Ne		2258 by Kr
Van der Waals, T	2441 by Ar		2258 by Ne
	2441 by He		2258 by Xe
	2441 by Kr	Xe (Xenon)	
	2441 by Ne	<u>Xe I</u>	
	2441 by Xe	Stark, E	2023
<u>Sr II</u>		Van der Waals, T,E	2366 by Ar
Stark, E	2198		2366 by He
Van der Waals, E	2163 by Ar		2155 by Kr
	2163 by He	Van der Waals, T	2195 by Ar
T (Tritium)			2195 by He
<u>T I</u>			2195 by Kr
Van der Waals, E	2245 by Ar		2195 by Ne
Ti (Titanium)			2195 by Xe
<u>Ti I</u>		Van der Waals, T,E	2452 by Ar
Doppler-Van der Waals,			2452 by He
T,E	2297 by C ₂ H ₂ -N ₂ O		2452 by Kr
Tl (Thallium)			2452 by Ne
<u>Tl I</u>			2452 by Xe
Resonance, E	2259		

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5. ERRATA

Ref. No.*	Corrections or Additions to NBS Special Publication 366 (Sept. 1972)
569	In Part 1, this reference should be listed under 1.1.2.1.-- Experimental papers.
861	In Part 3, this reference appears in the original Russian version. This publication was translated into English in 1972. It is assigned a new number in this supplement--2111.
1466	In Part 2, this reference should not appear under Kr I-- Resonance, T, E, C.
1488	In Part 3, this reference should appear under 1968, not 1969. It is assigned a new number in this supplement--1369.
1557	In Part 1, this reference should be listed under 1.1.1.4. Shifts of hydrogen lines--Theoretical papers.
1670	In Part 1, this reference should be listed under 1.1.1.4. Plasma polarization shift--Comments.
1693	In Part 1, this reference should be listed under 1.2.3.-- Theoretical papers, instead of 1.5.1.--Theoretical papers.
1775	In Part 3, an English translation to the previously cited Russian work is provided; this translation, found in J. Appl. Spectrosc. (USSR) <u>14</u> , 676 (1971), is also incorporated into this supplement.
1789	In Part 3, an English translation to the previously cited Russian work is provided. This translation, found in J. Appl. Spectrosc. (USSR) <u>14</u> , 51 (1971), is also incorporated into this supplement. In addition, in Part 1, the entry should be listed under 1.4.1.--Experimental papers.
1838	In Part 3, an English translation to the previously cited Russian work is provided; this translation, found in Sov. Phys. J. <u>14</u> , 1137 (1971), is also incorporated into this supplement.

*The numbers refer to paper identification numbers of Part 3 of the
first bibliography.

- 1839 In Part 3, an English translation to the previously cited Russian work is provided; this translation, found in J. Appl. Spectrosc. (USSR) 14, 803 (1971), is also incorporated into this supplement.
- 1840 In Part 3, an English translation to the previously cited Russian work is provided; this translation, found in J. Appl. Spectrosc. (USSR) 15, 1642 (1971), is also incorporated into this supplement.
- 1868 In Part 3, an English translation to the previously cited Russian work is provided; this translation, found in Sov. Phys. J. 14, 568 (1971), is also incorporated into this supplement.
- 1878 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in J. Appl. Spectrosc. (USSR) 14, 21 (1971), is also incorporated into this supplement.
- 1879 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in J. Appl. Spectrosc. (USSR) 15, 1360 (1971), is also incorporated into this supplement.
- 1935 In Part 2, this reference should be listed under Hg I (Van der Waals, T) by the following perturbers: He, Ne, Ar, Kr, and Xe.
- 1940 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in J. Appl. Spectrosc. (USSR) 16, 642 (1972), is also incorporated into this supplement.
- 1995 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in J. Appl. Spectrosc. (USSR) 17, 1545 (1972), is also incorporated into this supplement.
- 1996 In Part 3, an English translation to the previously cited Russian work is provided; this translation, found in Sov. Phys. J. 15, 667 (1972), is also incorporated into this supplement. In Supplement 1, the name of the principal author is misspelled; the correct spelling is I. I. Klykov, and this change is incorporated into Parts 3 and 4 of this supplement.

**The numbers refer to paper identification numbers of Part 3 of Supplement 1.

Ref. Corrections or Additions to NBS Special Publication 366,
No.** Supplement 1 (Jan. 1974)

- 1999 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in J. Appl. Spectrosc. (USSR) 16, 17 (1972), is also incorporated into this supplement.
- 2011 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in Sov. Phys. J. 15, 416 (1972), is also incorporated into this supplement.
- 2023 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in J. Appl. Spectrosc. (USSR) 16, 401 (1972), is also incorporated into this supplement.
- 2024 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in Sov. Phys. J. 15, 451 (1972), is also incorporated into this supplement.
- 2038 In Part 3, add the reference Astron. Astrophys. 30, 482 (1974). This erratum is incorporated into this supplement.
- 2074 In Part 3, an English translation to the previously cited Russian work is provided; this publication, found in Sov. Phys. J. 15, 610 (1972), is also incorporated into this supplement.

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U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET	1. PUBLICATION OR REPORT NO. NBS SP-366, Supplement 2	2. Gov't Accession No.	3. Recipient's Accession No.
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16. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.) This is the second supplement to the NBS Special Publication 366, "Bibliography on Atomic Line Shapes and Shifts (1889 through March 1972)." It contains about 400 references and covers the literature from July 1973 through May 1975. As before, the bibliography contains five major parts: (1) All general interest papers are catalogued according to the broadening mechanisms (and, further, according to special topics under several of the mechanisms) and as to whether the work is a general theory, a general review, a table of profiles or parameters, a comment on existing work, a study of general experimental measurement techniques, or an experimental effort of general importance. Also included are selected papers on important applications of line broadening and on miscellaneous topics relating to atomic spectral line shapes and shifts. (2) In Part 2, all papers containing numerical data are ordered as to element, ionization stage, and broadening mechanism (in the case of foreign gas broadening the perturbing species are listed), and it is indicated whether the data are experimentally or theoretically derived. (3) While in the two preceding parts of the bibliography the references are listed for brevity by identification numbers only, in Part 3 all references are listed completely by journal, authors, and title and are generally arranged chronologically and alphabetically within each year according to the principal author. (4) This section contains a list of all authors and their papers. (5) A final section provides corrections or additions to the first bibliography and supplement.			
17. KEY WORDS (six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons) Atomic; instrumental broadening; line shapes; line shifts; pressure broadening; resonance broadening; Stark broadening; Van der Waals broadening.			
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